



AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF THE CLAIMS:

Claims 1-28 : (Canceled)

Claim 29 : (Currently Amended) A partially interconnected network, comprising:

a plurality of Allocated Nodes each allocated to one of a number of Areas (AREAs); a plurality of Star Nodes (STARs); point-to-point interconnections between the Allocated Nodes and the STARs; a number of AREAs with Allocated Nodes which are interconnected to an individual STAR forming a number of Routes (ROUTES) from the individual STAR; the Allocated Nodes of a first of the AREAs being interconnected to a set comprising some, but not all, of the STARs; further of the AREAs being similarly interconnected to further sets each comprising STARs; at least one interconnection choice (CHOICE) between any two Allocated Nodes being in different AREAs; and an interconnection route comprising two point-to-point interconnections interconnected in series by one of the STARs,

$(AREAs) \times (AREAs-1) \times (CHOICES) = (STARs) \times (ROUTES) \times (ROUTES-1)$ and

$(STARs) \times (ROUTES) / (AREAs) = \text{a positive integer}.$



Claim 30 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein there is an equal number of CHOICES of ROUTEs between any two of the Allocated Nodes in different AREAs, and wherein there is an equal number of ROUTEs from each STAR.

Claim 31 : (Canceled)

Claim 32 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein there is an equal number of CHOICES of ROUTEs between any two of the Allocated Nodes in different AREAs.

Claim 33 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein there is an equal number of ROUTEs from each STAR.

Claim 34 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein at least one of the AREAs contains one Allocated Node.

Claim 35 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein each point-to-point interconnection comprises a multiple circuit transmission system.

Claim 36 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein at least one of the point-to-point interconnections passes through an AREA cross-connect.

Claim 37 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein the plurality of STARs equals a number of AREAs or an integer multiple thereof; wherein a number of AREAs and the plurality of STARs are each cyclically identified; wherein modulo differences of identities allocated to the cyclically identified STARs in a set or sets, selected in pairs within each set, form a single contiguous sequence or multiple contiguous sequences, respectively, from one to one less than a number of cyclically identified AREAs; and wherein a remainder of the cyclically identified AREAs is interconnected each to a corresponding set of cyclically identified STARs which are each sequentially rotated by one from a former contiguous sequence to create a regular rotated interconnection pattern or regular rotated interconnection patterns.

Claim 38 : (Previously Presented) The partially interconnected network as claimed in claim 37, wherein, in each pattern, each cyclically identified STAR is interconnected to a cyclically identified AREA having the same cyclical identifier as the STAR.

Claim 39 : (Previously Presented) The partially interconnected network as claimed in claim 38, wherein the rotated contiguous sequence is transformed by reordering and/or renumbering the AREAs and/or reordering and/or renumbering the STARs while retaining an equal number of ROUTEs between any two Allocated Nodes in different AREAs.

Claim 40 : (Previously Presented) The partially interconnected network as claimed in claim 39, wherein there is a second plurality of cyclically numbered STARS which is equal in number to the earlier plurality of cyclically numbered STARS creating a second interconnection pattern, and wherein the second interconnection pattern is a counter rotating version of the pattern of interconnections of the earlier plurality of cyclically numbered STARS.

Claim 41 : (Currently Amended) The partially interconnected network as claimed in ~~claim 31~~ claim 29, wherein ROUTEs is a prime number or an integer power of a prime number; wherein AREAs equals $ROUTEs^2$; and wherein STARS equals $ROUTEs \times (ROUTEs-1)$.

Claim 42 : (Currently Amended) The partially interconnected network as claimed in ~~claim 31~~ claim 29, wherein there is an odd integer number of STARS, each STAR having three ROUTEs interconnected thereto.

Claim 43 : (Currently Amended) The partially interconnected network as claimed in claim 29, wherein AREAs and STARS share sites; and wherein ~~redundant~~ pairs of the point-to-point interconnections of a ~~twin CHOICE network~~ do not have their terminations on the same pair of sites.

Claim 44 : (Previously Presented) The partially interconnected network as claimed in claim 32, wherein:

$$(AREAs) \times (AREAs-1) \times (CHOICES) = (STARs1) \times (ROUTEs1-1) + (STARs2) \times (ROUTEs2-1) + (STARs3) \times (ROUTEs3-1) + \dots + (STARsn) \times (ROUTEsn-1).$$

Claim 45 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein at least one STAR comprises a plurality of distributed switches interconnected to form a mesh network.

Claim 46 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein at least one STAR comprises a plurality of routers interconnected to form a mesh network.

Claim 47 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein each ROUTE comprises a wave division multiplex (WDM) link.

Claim 48 : (Previously Presented) The partially interconnected network as claimed in claim 47, wherein a number of wavelengths carried by each link is one less than the number of ROUTEs.

Claim 49 : (Previously Presented) The partially interconnected network as claimed in claim 48, wherein individual wavelengths from one input WDM link are selectively taken to different output WDM links.

Claim 50 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein at least one of the AREAs is without any of the Allocated Nodes.

Claim 51 : (Previously Presented) The partially interconnected network as claimed in claim 33, and further comprising extra paths(EXTRA), wherein:

$$(AREAs) \times (AREAs-1) \times (CHOICES) = (STARs) \times \{(ROUTEs) \times (ROUTEs-1) - (EXTRA)\}.$$

Claim 52 : (Previously Presented) The partially interconnected network as claimed in claim 33, and further comprising missing paths (MISSING), wherein:

$$(AREAs) \times (AREAs-1) \times (CHOICES) = (STARs) \times \{(ROUTEs) \times (ROUTEs-1) + (MISSING)\}.$$

Claim 53 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein a number of the AREAs is interconnected to a further partially interconnected network having an equivalent number of the AREAs and a lesser number of STARs.

Claim 54 : (Currently Amended) A plurality of partially interconnected networks, each partially interconnected network comprising: a plurality of Allocated Nodes each allocated to one of a number of Areas (AREAs); a plurality of Star Nodes (STARs); point-to-point interconnections between the Allocated Nodes and the STARs; a number of AREAs with Allocated Nodes which are interconnected to an individual STAR forming a number of Routes (ROUTEs) from the individual STAR; the Allocated Nodes of a first of the AREAs being interconnected to a set comprising some, but not all, of the STARs; further of the AREAs being similarly interconnected to further sets each comprising STARs; at least one interconnection choice (CHOICE) between any two

Allocated Nodes being in different AREAs; and an interconnection route comprising two point-to-point interconnections interconnected in series by one of the STARs, and each partially interconnected network having a same number of STARs; and a corresponding STAR of each partially interconnected network being interconnected by a respective mesh network,

$$\frac{(AREAs) \times (AREAs-1) \times (CHOICES)}{(STARs) \times (ROUTES) \times (ROUTES-1)} \text{ and } \frac{(STARs) \times (ROUTES)}{(AREAs)} = \text{a positive integer.}$$

Claim 55 : (Previously Presented) The partially interconnected network as claimed in claim 29, wherein the partially interconnected network is a telecommunications network.

Claim 56 : (Currently Amended) A three-stage switch, comprising: at least four interconnection choices (CHOICES) between each pair of stages, each pair of stages being connected by a partially interconnected network comprising: a plurality of Allocated Nodes each allocated to one of a number of Areas (AREAs); a plurality of Star Nodes (STARs); point-to-point interconnections between the Allocated Nodes and the STARs; a number of AREAs with Allocated Nodes which are interconnected to an individual STAR forming a number of Routes (ROUTES) from the individual STAR; the Allocated Nodes of a first of the AREAs being interconnected to a set comprising some, but not all, of the STARs; further of the AREAs being similarly interconnected to further sets each comprising STARs; at least one of the CHOICES between any two Allocated Nodes

being in different AREAs; and an interconnection route comprising two point-to-point interconnections interconnected in series by one of the STARs,

$$\begin{aligned} & \underline{(\text{AREAs}) \times (\text{AREAs}-1) \times (\text{CHOICES}) = (\text{STARs}) \times (\text{ROUTEs}) \times (\text{ROUTEs}-1) \text{ and}} \\ & \underline{(\text{STARs}) \times (\text{ROUTEs}) / (\text{AREAs}) = \text{a positive integer.}} \end{aligned}$$